



UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
ARIZONA ECOLOGICAL SERVICES STATE OFFICE
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2-21-93-F-430

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February 7, 1994

MEMORANDUM

TO: Area Manager, Bureau of Land Management, Tucson, Arizona
FROM: State Supervisor
SUBJECT: Biological Opinion on Cienega Creek Headcut Repair

This biological opinion responds to your request of December 29, 1993, for formal consultation pursuant to section 7 of the Endangered Species Act (Act) of 1973, as amended, on the proposed headcut repair on Cienega Creek, Pima County, Arizona. The species of concern is the Gila topminnow (Poeciliopsis occidentalis). The 90-day consultation period began on January 3, 1994, the date your request was received in our office.

This proposed action was originally submitted for formal section 7 consultation on July 15, 1993, as part of a larger action including construction of riparian pasture fencing. That formal consultation was withdrawn on December 29, 1993, by the Bureau of Land Management (BLM) by mutual agreement with the Fish and Wildlife Service (Service). Formal consultation was initiated on the same date for the headcut repair alone. Riparian pasture fencing will be resubmitted for formal consultation at a later date in a package which will include a more comprehensive livestock grazing and road maintenance action.

The following biological opinion is based on information provided in the July 15, 1993 biological evaluation, the December 29, 1993 biological evaluation, a site visit by BLM, Service, and Arizona Game and Fish Department (AGFD) staff on May 13, 1993, data in our files, and other sources of information.

BIOLOGICAL OPINION

It is my biological opinion that implementation of the proposed headcut repair on Cienega Creek is not likely to jeopardize the continued existence of the Gila topminnow. No critical habitat has been designated for this species.

BACKGROUND INFORMATION

Species Description

The Gila topminnow was listed as an endangered species on March 11, 1967, without critical habitat. The Gila topminnow is a small, livebearing fish found in the Gila, Sonora, and de la Concepcion River drainages in Arizona, New Mexico, and Sonora, Mexico (Minckley 1973, Vrijenhoek et al. 1985), but is listed only in the United States portion of its range. It was once among the commonest fishes of the Gila River and its tributaries (Hubbs and Miller 1941). Destruction of its habitat through water diversion, stream downcutting, backwater draining, vegetation clearing, channelization, water impoundment, and other human uses of natural resources; plus competition with and/or predation by nonnative fish species, most notably mosquitofish (Gambusia affinis), have resulted in extirpation of the Gila topminnow throughout most of its range (USFWS 1984, Meffe et al. 1983).

Cienega Creek is one of nine remaining natural Gila topminnow populations, and is one of only two natural populations found on public lands. Cienega Creek is very unusual because it has no nonnative fish present in the middle and upper reaches (Simms 1991, Brown and Abarca 1992). Because of the large size of the topminnow habitat and the unaltered composition of the fish community, Cienega Creek is one of the most important of the Gila topminnow remnant natural populations (Simms and Simms 1991). Protection of Cienega Creek from nonnative incursion and protection and restoration of Gila topminnow habitat in the creek is considered vital to the survival and recovery of the species.

Project Description

The proposed action is stabilization of a 4.5 feet high headcut located on Cienega Creek in the NE1/4 of the SE1/4 Sec. 3, T.19S., R.17E (Figure 1). Above the headcut are 2.5 miles of cienega habitat where stream flow is on the land surface. No natural controls to the headcut, such as bedrock, are present to stop the upstream migration of the headcut, which would lower the stream channel below the land surface thus destroying the cienega nature of the stream. The lowered stream would likely have a more confined channel, faster velocity, and less habitat complexity, and would therefore, be less suitable habitat for Gila topminnow.

The headcut would be stabilized by shaping a more gradual slope on the headcut using a small front-end loader/tractor and hand tools. Erosion control matting and large rock material would be placed on the sloped areas. Sand bags and/or logs would be placed upstream of the headcut and anchored with rebar to spread the water across a larger portion of the channel width to lower erosive force.

To assist with stabilization, native riparian vegetation, including willow seedlings (Salix gooddingii) and deergrass (Muhlenbergia repens), would be planted above and around the headcut. To protect the integrity of the headcut stabilization project and allow vegetation to establish, the headcut area would be enclosed with a temporary electric fence to exclude livestock grazing. The fencing would enclose the headcut and stream channel for 50 yards in both directions from the headcut.

subject to the consultation requirements established in section 7 and, therefore, are not considered cumulative in the proposed action. No cumulative effects are anticipated from the proposed action.

INCIDENTAL TAKE

Section 9 of the Act, as amended, prohibits any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct) of listed species of fish and wildlife without a special exemption. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered a prohibited taking provided that such taking is in compliance with the incidental take statement. The measures described below are nondiscretionary, and must be undertaken by the agency or made a binding condition of any grant or permit issued to the applicant, as appropriate.

The Service anticipates that the proposed headcut repair on Cienega Creek would result in incidental take of Gila topminnow through mortality of fish during work in the stream with heavy machinery and hand labor. Because reliable estimates of Gila topminnow populations are not obtainable due to sampling limitations and to the rapid population changes inherent in a short-lived species with high fecundity, this take cannot be quantified as individual Gila topminnow. Therefore, greater than anticipated incidental take will be considered to have occurred if more than 15 dead fish of any species are observed within or downstream from the project area during project implementation.

If, during the course of the action, the amount or extent of the incidental take limit is exceeded, the BLM must reinitiate consultation with the Service immediately to avoid violation of section 9. Operations must be stopped in the interim period between the initiation and completion of the new consultation if it is determined that the impact of the additional taking will cause an irreversible and adverse impact on the species. The BLM should provide an explanation of the causes of the taking.

Reasonable and Prudent Measures

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize the incidental taking authorized by this biological opinion.

1. Conduct all proposed actions in a manner which will minimize take of Gila topminnow.
2. Maintain complete and accurate records of actions which may result in take of Gila topminnow and their habitat.

extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may impact listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action.

We appreciate the efforts of the BLM in protecting and recovering the Gila topminnow in Cienega Creek. If we can be of further assistance, please contact Sally Stefferud or Tom Gatz.



Sam F. Spiller

cc: Director, Arizona Game and Fish Department, Phoenix, AZ
Regional Director, Fish and Wildlife Service, Albuquerque, NM
(AES)
Director, Fish and Wildlife Service, Washington, D.C. (DES)

Headcut Location
Empire-Cienega Resource Conservation Area
Pima County, AZ

FIGURE 1.

